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Prevalence and determinants of brucellosis in dairy cattle of Sylhet District

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Bovine brucellosis mainly caused by gram-negative coccobacilli bacteria *Brucella abortus*; is responsible for several public health and economic loss. In cattle, it causes abortion during the last trimester of pregnancy. It also prolongs inter calving intervals, reduces lifetime production of both calves and milk. However, the epidemiology of brucellosis in Sylhet District of Bangladesh is totally unknown. Therefore, the objective of this study was to assess the prevalence and determinants of brucellosis in dairy cattle of Sylhet District. A cross-sectional study was carried out in 12 sub-districts of Sylhet to collect 386 serum samples through using simple random sampling. The sera were tested with Rose Bengal Test (RBT), *Brucella abortus* Plate Agglutination Test (BPAT) and Serum Agglutination Test (SAT) to find out the sero-positivity, and a sample was considered to be positive if any one of these three tests showed confirmatory reaction. The study revealed an overall 17.09% (95% CI: 13.67-21.18) prevalence in dairy cows. Relatively higher prevalence (56.08%; 95% CI: 42.23-70.32) was recorded in cows having parity of ≥4. Prevalence was significantly higher in animals with history of abortion 90.63% (95%CI: 75.79-96.76), repeat breeding 79.17% (95% CI: 65.74-88.27) and reproductive abnormalities 48.54% (95% CI: 39.12-58.07). From multivariable logistic regression analysis, it was estimated that the animals of parity ≥4, were at higher risk (P-value 0.02, OR=7.82) than 1, 2 and 3. The determinants, history of abortion (P-value 0.05, OR=5.89), repeat breeding (P-value 0.01, OR=9.74) and other reproductive abnormalities (P-value 0.03, OR=3.10) in cows were significantly associated with *Brucella* antibody sero-positivity. The prevalence was higher than the other previous studies in different regions of Bangladesh, which might be a concern in public health point of view. Eventually, public awareness and national control measures are necessary to minimize the impact of brucellosis.

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